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A NEW SCIENTIFIC ARGUMENT FOR IMMORTALITY

NOTHING is borne in upon one with greater vividness and force at critical moments of his career than the vital and intimate way in which the events of his own personal experience are bound up with those of his fellows. Deeper than the feeling of individual isolation, poignant as that may be, is the sense of social solidarity which at such times appears either as an insurmountable barrier or as an infinite opportunity to the realization of the self.

This recognition of the social nature of experience, like its counterpart the clear consciousness of individuality, is a relatively late product of human civilization. The two ideas properly emerge together. But European ideals of culture have been so dominated for two centuries by an isolative conception of the self, that the truth concerning the fundamentally social nature of consciousness has been overshadowed by a narrow individualism. It is only beginning to be realized, in all its implications, that a sound theory of democracy, of moral freedom, and of immortality is bound up with a true understanding of the mutual relations of the individual and society.

Along with the individuation of society there takes place a corresponding socialization of consciousness in the self—and this, like everything else in nature, is an energic phenomenon. The so-called mental individuality of a self reflects the values of the social environment as the brain maps the progressive elaboration of sensory and motor adjustments which take place on the periphery of the organism. Personality and consciousness are not so bound up with the individual organism that other persons can not share in them, but constitute a social synthesis which, indeed, has no existence apart from individual persons, yet expresses relationships which extend beyond this. Consciousness is the center of social osmosis, developed in the individual at the points of attrition with other individuals, through which the social values find their way from self to self. It is the very essence of selfhood to be passed on to others; it is social. Therein lies its immortality, paradoxical as the statement may seem.

"The father who feels himself more mutilated by loss of wife and family than by loss of a limb does so, not because he is specially altruistic, but because his family is a far more vital part of his self than his limb."[1] If I have identified my self with the lives and interests of others, then my self can never die, because it is being propagated endlessly in the social chain of individuals which does not exclude but incorporates me.

This apparently denies personal and conscious survival after death. But that this is not the case will be seen by the consideration, which follows, of the relevant facts of biological and physical science. In spite of theological arguments from miracles and revelation and from the nature of God, intuitional arguments from innate ideas, ethical arguments from the nature and needs of man, idealistic arguments from the alleged priority and superiority of the spiritual, psychophysical arguments based on the apparent control of mind over matter, and arguments of the physical scientist based on the indestructibility of matter and the conservation of energy—in spite of all these arguments and others that might be mentioned, most persons find that their faith in a future life is a belief only, not a conviction. And why? Because the self for whose immortality they hope is an unreal abstraction. *The trouble is not that they believe in immortality, but that they are ascribing it to an impossible self.* The difficulty lies in the conception of personality. The self is conceived as a particularistic entity with barriers which keep it in inviolable isolation, independent of all outside influences, transcendent and self-sustaining. Its character is something sacred and incommunicable, something unique and unshareable, something even hostile in its native attitude toward the social environment. Such the self was conceived to be, at the time when the traditional doctrine of a future life was formulated. With such a conception it is impossible to state a rational theory of immortality. The water of Niagara is constantly changing, but the form of the cataract remains. The material substance of my body changes, but the continuity of my selfhood is recognizable through the changes. The individual has only a functional identity. Consciousness, *a* consciousness, *my* consciousness, like the moving picture in a kinetoscope, like a wave on the sea, like the vortex of a cyclone, has only a functional unity and continuity. Its individual *being* consists of what it persists in *doing.*

This problem is intimately connected, on the biological side, with the three facts of *birth, death,* and *sex.* Death is the precondition of life. The problems of degeneration and regeneration, of destruc-

[1] Mrs. Bosanquet, "The Standard of Life," p. 132.

tion and reproduction, are solved in the same breath. It is only the creature that is born that can die. Moners and amœbas are immortal, so Weismann tells us. They do not die because they never were born. They live on in new forms which result from the mere fission or division of the so-called parent cell. In gemmation, such as that seen in all plants and in many animals, we have the first step in the evolution of sex, and consequently in the evolution of death. Death enters "in connection with the alternation between two methods of reproduction and multiplication of life . . . in the course of the change from the sexual method of simple cell-division to the method of fertilization which, in time, comes to be nature's dominant method not only of preserving life, but also of giving it variety, richness, and plastic power of adaptation to different environments. With the rudiments of sex appear also the beginnings of death."[2] Professor Minot says: "Progress in age is accompanied by a gradually increasing specialization or organization of the parts." "It is natural to suppose that the two processes are connected. The supposition is confirmed by the observation that the less a tissue is specialized the more does it show traces of cell proliferation; while in the most highly specialized cells, no evidence of division can be found. Accordingly the conclusion is forced upon us that organization acts as an impediment to cell-division, and is, in fact, the direct cause of a loss in the power of growth, and since we may regard death as the final event, resulting from the loss of the powers of the individual, we reach, as our final conclusion, the theory that organization is the cause of natural death . . . evolved perhaps as the penalty or price paid by the higher organisms for the very possession of a higher organization."[3] Weismann says that the death of the somatic cells has been acquired by natural selection because of its utility to the race, while the germ-plasm is immortal. In other words, the death of the body as a somatic individual is for the sake of the larger future life or germinal immortality.

But this need not mean annihilation. It may mean incorporation on a higher level. Life does not begin with a minimum of vitality, rise to a climax or maximum, and then decline again. The acme or climax is at the start, and life itself is a process of dying—a gradual loss of vitality. As Professor Howell says: "It is important to notice that these signs of deterioration in the machinery of life do not make their appearance first during or after the period of maturity, but begin to develop from the time of birth, or possibly before." "What we call the creative power of assimilation, which

[2] Smyth, "The Place of Death in Evolution," pp. 23–24.

[3] Quoted by Smyth from the "Reference Handbook of the Medical Sciences," Vol. IV., p. 399.

measures the capacity of living matter to form matter like itself, decreases steadily from birth. Like a stone projected upward, the initial velocity begins to fall from the outstart. As the height to which the stone travels may be taken as a measure of the force with which it was thrown, so the length of life in any individual may be taken as the measure of the power or capacity of assimilation with which the germ of that individual started its career. . . . The curve of vitality . . . does not rise from birth, reach its maximum in the vigor of maturity, and then fall in old age, but begins to fall steadily, though not uniformly, from the beginning of life."[4] Thus death is a process which is going on during what is popularly called the life of the individual, and the moment which is called death is but the culmination of a process which has in reality covered the whole period of life. Hence, it is literally true that "in the midst of life we are in death," or it would be truer to the facts to say that while still living death is in us. "The organism dies because it grows."

But if biological science compels us thus to interpret life in terms of death, it equally opens up *the possibility of interpreting what we call death in terms of life.* Man is as immortal as the moner. Before the life of a child commenced, it was part of its parents, and its existence now is nothing biologically but an outgrowth and a continuation of their lives. What difference whether it be the entire organism that is perpetuated by self-division, or certain selected life-bearing cells? An organism is nothing but a center or focus through which the world energy operates. The body of a man as well as of a moner undergoes complete change of its constituent elements in a lifetime, if not oftener. What matter, then, that the irrelevant somatic portion is lost in what we call death? It is occurring every day in the loss of epidermal cells which are rubbed off by friction with the environment.

The only immortality that is possible in any case is the immortality of function. Individuality has been defined as the "persistent realization of a particular type of structure." But what is this "persistent realization"? Not a persistence of the constituent elements of the tissues or cells. It is the persistence of a use, of a function, of a form or mode of behavior. A boy loses the blade from his jack-knife and puts in a new one. Yet he speaks of it as the same knife. He then loses the handle and gets a new handle. Still he speaks of it as the same knife. But suppose now that he finds the old blade and handle—what knife would that be? it has been asked. It would indeed be the old knife, his knife, the knife he had lost. But it would not be the same knife it would have been had it

[4] "Reference Handbook of the Medical Sciences," Vol. IX., Supplement, p. 207.

continuously fulfilled the function of a knife. A knife whose blade or handle is in the bottom of the sea is not a knife. The essence of "knife" is the function of cutting.

My body has changed completely since I was a boy, yet I have not forgotten things that happened when I was a boy and I claim to be the same person to whom these things happened. The scar on my arm where I was vaccinated twenty years ago still remains though the flesh has been renewed many times in the interval. What persists is the continuity of function, the form of activity, of this organism. This is what I mean by my self and it is this which is immortal. What difference does it make whether in what we call death I lose a single superficial cell of the epidermis, or in the life-long period of growth which, as we have seen, is at the same time a descent to death, I lose all these somatic cells, if meanwhile I have perpetuated my life as a continuous function into other modes of being?

By means of an application of the kinetoscope to the life of growing plants the normally slow processes of development are condensed into a few moments and we behold a grain of wheat swell, burst into life, put forth a shoot, and by stages before our very eyes develop to maturity, "first the blade, then the ear, and after that the full corn in the ear." Now suppose the life of a human being to be portrayed in like manner by telescoping into a few minutes its development from the germ to old age and death. We might conceivably then witness its transformations from the moment when the ovum is quickened into life by the sperm until by successive metamorphoses it develops into a sentient creature. We might follow it through that marvelous embryonic drama wherein it recapitulates the evolution of the race until at last it takes on the human form. We might see the helpless embryo thrust into an outer environment where it must cry and fight its way into a clear consciousness of its own individuality. Soon speech breaks forth in a gradual definition of homogeneous primary babblings. We see it struggle up to the erect stature. We behold the evolution of the hand and the coordination of sensory and motor functions for the higher uses of intelligence. Finally the child comes to full self-consciousness in some assertion of its own personality in the social whole: I am I and thou art thou. We see this human life mature, strive, think, laugh, love, win in the struggle for the highest and the best. We also see the powers wane, the limbs grow feeble, the eyes grow dim, speech falter, the health and zest of life vanish gradually as they came, as a wave rises to a crest and then sinks away into the indistinguishable expanse of the sea. We call this death.

But does death end all? What is death? The answer is found in understanding what is meant by birth. Birth is this life-long redistribution of substance or energy to serve the new purpose. Death, like birth, is a process, not an event. It is merely the negative phase of a rebirth into a higher and different sphere. When the individual wave recedes into the depths of the ocean does it lose its reality and identity? In one sense, yes. In another sense, no. It has entered into the very substance and form of myriad other waves. The seed in a sense loses its individuality when it germinates, but in another sense this is the fullest realization of the seed. The grain of wheat may not live except it die. When the mother lives her life physically and spiritually into her child she does not lose her own individuality. It is only thus that for the first time she fully realizes it. By living my life into the lives of others I do not thereby lose my selfhood; I find it. Individuality is achieved not by isolation, but by coalition; not by abstraction, but by identification. The law of the realization of the highest type of selfhood is a social law. The most complete individuality means the greatest capacity for socialization of one's consciousness. This is not self-immolation, but the very culmination of selfhood.

A man is immortal when he has won survival value in the social evolution of his own consciousness, when he has lived himself so completely into the lives of others that the interests and values of his own life are only realized by being identified with theirs. His immortality is their life. The future life is not an everlasting existence of isolated selves. It is a social achievement. *"Natural selection cares naught for the individual but only for the species, it is said. Then identify yourself with the species"* (C. L. Herrick).

So far we have been considering the biological aspects of the problem. What is called the death of individuals is not, we have seen, incompatible with their functional immortality. But this must not be confounded with the "immortality of influence" theory, to which it bears a superficial resemblance. It is an individual and personal immortality in the only sense in which these words have a defensible meaning—viz., the persistence of a definite mode of function or behavior. At this point biology has much to learn from recent physics, and the new light it throws upon the doctrine of the conservation and interconvertibility of energy.

This question of immortality ultimately involves the problem of origins—whether anything absolutely new ever comes into existence and whether anything ever really ceases to exist. We experience transformation, redistribution of matter, interconvertibility of energy, on every side. But is matter or energy ever absolutely created

or destroyed? Science answers in the negative. If we accept the conservation doctrine, then, the substance of our being can never perish. The inquiry reduces, therefore, to *the question whether and in what sense the forms or values of things are conserved.* In the death of an organism we seem to see the form destroyed while the matter or material which composed it persists in other forms. To dust it returns. But even dust has form. The same question breaks out in the so-called inorganic realm. Does redistribution there signify further degradation of form? Must there not be at last a point where form as well as substance is conserved? If we answer in the negative we are involved in the absurdity of a matter wholly without form, a substance devoid of attributes. If we admit the conservation of form we have introduced a principle in the light of which the whole problem of death and immortality must be restated.

The truth seems to be that a doctrine of absolute persistence or eternity of matter is no more intelligible than a doctrine of absolute evolution or creation. Variability of phenomena is as familiar a fact as their uniformity. We have to admit the facts both of permanence and of change. The conservation doctrine as usually stated is suicidal. It maintains that the sum total of matter or energy is constant in amount, the only changes being in the forms of things. There is quantitative identity, but qualitative diversity. But this not only is contrary to the facts; it is inherently unintelligible. There is no such thing as mere quantitative identity. It is a contradiction in terms. The only universe of which this could be true would be one with no qualitative differences within it. When I say that the amount of energy represented in the fuel has its equivalent in the heat, gases and ash left after combustion, my statement comes simply to this: that, setting aside the qualitative differences between one form of energy and another, one is the same as the other. But, apart from these very qualities, it is impossible to distinguish two portions of even the same kind of energy. They must be spatially or temporally or causally or logically discrete, and such discreteness introduces qualitative difference. It is impossible to say that two things are the same without implying a reference to their common qualities or attributes. To say that two things are quantitatively identical, strictly speaking, is to say that they are not two things at all, but one. Quantitative identity, in other words, is identity which destroys the differences; it is purely abstract or formal. The only identity which we experience in our actual world is identity in diversity, unity in variety, permanence in change. There can be no conservation or persistence of matter or energy apart from the persistence of its qualitative characters or forms. To say

that the energy of the universe is constant in amount is simply saying that the universe is what it is and can not become what now it is not—a proposition manifestly false since at this moment my present feeling is a unique fact which never before has been and which, therefore, is some slight addition to the sum total of reality. In short, quantitative identity implies persistence of personal qualities or values, and the admission of the latter anywhere in nature opens the door for its possibility everywhere.

Applying this to the question of immortality, the truth is that the organic and inorganic are interdependent terms. This distinction, like others that might be mentioned, is one which is set up within experience, not a distinction between our experience which is organic and something inorganic outside of our experience. Anything becomes organic when it enters in an intimate way into a certain type of activity. To draw a rigid line and say that the pen I hold in my hand as I write these words is inorganic while the horny tissue which I snip from my finger-nail is organic is to turn a useful abstraction into a fetish. The universe is a continuous and unitary dynamic system, and this distinction expresses a fact which is true only from the point of view from which the distinction is made. The principle of the conservation of form, if true for the inorganic world, is true for the organic world as well. A mode of activity, a value, once come into being, can not perish. It may be transformed. It must be transformed in order to endure, since the essence of being is in becoming. But this transformation can not mean its destruction, for this would mean the annihilation of reality. *Instead of the scientific doctrine of conservation militating against the possibility of immortality, when correctly construed it is its best advocate.*

There is just as good reason for regarding the redistribution of energy which takes place in the life-long dying of an organism as a transformation to a higher level as to regard it as a degradation to a lower level of being. How this may be in detail we may not at present be able to say, but it is quite possible that, as Professor Herrick has said, "other intelligences may even now be walking undisturbed through our physical bodies, living and moving in a medium of which we may be entirely unconscious as we are demonstrably unconscious of myriads of other waves and media."

The ordinary assumption of science is that the most complex organizations are the most unstable and therefore transient. But the very opposite is probably true. The more complex an organization the greater the range of its relations and consequently the less dependent is it upon any single relation for its continued existence.

The complexity of the human individual, in both his physical and his mental aspects, is the best presumptive evidence for his survival of what is called bodily death. *The strongest argument for future existence is present existence.* The very fact that we are alive now is the best evidence that we will continue to live after death. Energy is not conserved in the abstract, but in individual modes or forms. And where should this take place if not in the highest manifestations? It is as true of the universe at large, as it is of society, that it comes to itself only in its individual expressions. Reality is real and can continue to be real only as expressed in specific and concrete form.

A study of the modes of organization in nature reveals the fact that there is a progressive series of successively higher types of equilibrium. In living matter the type of coordination is more extensive and complicated than in the so-called inorganic sphere. The equilibrium is relatively more perfect and tends to be self-perpetuating. Grades or stages of consciousness are apparently expressions of still higher forms of coordination, developing within the vital series, yet in important respects suggesting a new range of phenomena. There is nothing to prove that consciousness need be restricted to association with the individual organism with which it is now connected, at least in its present form. It is conceivable that the progressive differentiation of consciousness should connect itself with other forms of energy, and that the self-perpetuating function already possessed in a measure by living organisms should be indefinitely increased by a still higher synthesis. Consciousness may be bound up with supersensible forms of matter not dissolvable at death. "Even if the cortical equilibrium is disturbed and 'the house of this tabernacle be destroyed,' the reflex of its past is perfectly held in some higher synthetic construction, so that the individual remains conscious and actively cooperates in all subsequent currents of evolution."[5]

If, as the recent intra-atomic physics seems to suggest, there are still more subtle modes of energy pervading nature than those we have recognized in our chemistry and physics; if there is a universe within the atom itself, whose forces drift unhindered through the opaque objects of the sensible world on their errands of cosmic transformation—why may it not be that these heretofore imponderable energies are the reality of what we have vaguely relegated to the occult realms of life and mind? If this should be the case, the apparently insuperable obstacle which science hitherto has opposed to a belief in immortality is removed: the seeming destruction

[5] C. L. Herrick.

at death of that form or mode of energic synthesis which constitutes what we call the personality of the individual. But if, as we have seen, life and death are processes and not terminal events; if death, like birth, covers the entire period of what is called life; if, in short, disorganization and decay are the essential conditions of progressive organization and individuation—is it not possible that this life-long drama of destruction is really the obverse side of a constructive synthesis of personality whose pattern may only be made out in that world of intangible and invisible forces which science is only just beginning to glimpse in the fluoroscope?

We have often seen on a country road in the summer time a little vortex of dust spinning along, maintaining an individuality of its own, although the particles that are sucked into the cyclonic whorl are being continually cast aside as the apparition glides along. Now suppose this center of vector motion to rise into the air. It vanishes from sight. But there is no reason to suppose that it loses its individuality because we can no longer see the whirling leaves and dust. Similarly in the case of the organism: because in death the vortex of equilibrating forces which gave individuality to the bones and muscles and nerves has risen into the more rarefied atmosphere of an intangible and invisible realm of nature's forces, leaving behind its fugitive freight of decaying protoplasm, is no reason for denying that the form of activity is going on building for itself such an individuality as its intrinsic conditions may determine.

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CRITICAL REALISM AND THE TIME PROBLEM. I

THE time problem always furnishes a severe test for any philosophical position. If critical realism is able to give a definite and fairly simple solution of the metaphysical difficulties associated with time, this achievement will be decidedly in its favor. My approach will be both direct and indirect. I shall attempt, first, to disclose the inability of idealism to cope with the problem and, thereupon, I shall seek to indicate the answer of critical realism.

Men have constantly felt that the conclusions of geology and of astronomy in regard to the early history of our world were contradictory to idealism. When we are naturalistic in our outlook and leave any supposed Absolute or God out of the case, the trouble we encounter, as idealists, is obvious. Granted finite experience to be reality, what can be the meaning of the assertion that the world existed before there were any experiencers? Now science does

assume a naturalistic attitude, and, moreover, the pressure of science upon philosophy is to-day very severe. Science has proven herself along all lines, and her careful investigations command respect. Common sense has always had the suspicion that the attempts made by idealism to avoid the time *impasse* have displayed dialectic ingenuity rather than intellectual sincerity. This dialectic has usually based itself either on the fallacy of experience-in-general or on a denial of time. While not questioning the sincerity of the protagonists of idealism, I believe they were often too easily satisfied.

Personal idealism is, as a rule, both franker in its recognition of difficulties and nearer the concrete facts than absolute idealism; but it is unable to give an answer to the time problem, except upon the empirically-unjustified hypothesis of experiencers very different from those we know. Besides, this position is forced to acknowledge birth and death and the facts that our experience is continually changing and is not conserved. Panpsychism is the customary refuge of personal idealism when it is confronted by origins. I have, also, seen no good treatment of time by either personal idealism or panpsychism and, therefore, may neglect further discussion of them until such is forthcoming.

There is a doctrine advanced by Professor Dewey which swings between realism and idealism. He asserts that "things are what they are experienced as." If he looks upon experience as a social possession—a position which seems to me untenable and a survival of the Hegelian impersonalism—he has still to meet both comparative psychology and geology. I must confess that the article "Reality as Experience" appears to me, and I know to many others also, an endeavor to have his cake and eat it. The prevailing reaction against the "states of consciousness" theory and the reiteration that our experience is objective, that we have tree-experiences and table-experiences, is commendable, but, if regarded as a sufficient metaphysics, is to be condemned. Once ask, Whose experience?—and personal differences, so clearly stated in psychology, land such a doctrine in pluralism. It accomplishes this by pulling on its actual idealistic connections. Just these personal differences in perception due to perspective and to physiological factors prevent, also, any return to naïve realism—at least in its old form. I have sought to do justice to the objectivity of an individual's experience by calling it a "microcosm." Each of us has book-experiences and rock-experiences. I use this barbarous language because the ordinary form is shot through with the dualism expressed in physics and in psychology. If I said experience of, or consciousness of, rocks and trees, some would immediately assert that this was irrefutable proof that

consciousness was different from its object and that naïve realism was true. We do have physical-object experiences and, also, meanings which we label atoms and ether. The physical and the psychical are functional distinctions within the "microcosm" of the individual's experience, and the individual's experience is as objective as anything can be. This use of objective must not be confused with the usage of logic, for which objective and subjective are distinctions corresponding in general with those of appearance and reality. For the above reasons, then, I shall neglect this peculiar hybrid of realism and idealism in my study of the time problem.

I shall sum up the results of this negative approach. Absolute idealism generally takes refuge in experience-in-general or in a changeless fusion of changing and empirically-unconserved experiences. Mr. Bradley declares, "If time is not unreal, I admit our absolute is a delusion" ("Appearance and Reality," p. 206). Space forbids a critical study of absolute idealism, but this I will say: that disregard of, or lack of explanation for, the patent facts of our experience is characteristic of it, and any position that acknowledges and explains these facts is, therefore, preferable. Personal idealism either lapses into panpsychism or, in order to avoid pluralism, must supplement itself with critical realism. In a recent article I have sought to show how this last movement can take place. (*Psychological Review,* July, 1908.) Naturally enough, a mystic theism may satisfy those who are not interested mainly in science and who believe in immortality, preexistence and creationalism.

Critical realism, although it regards experience as a characteristic of parts of our present world, viz., the nervous system of men and animals, is not forced to assume that this was the case in the past. Qualitative changes in reality are quite possible. As I understand it, critical realism believes that the things a man handles are independent of his experience for their existence. The word "thing," like the word "nature," has two meanings, as I have recently indicated, and these must not be confused. A table-experience is a physical-thing experience and is objective, but it is not the same as the thing as an existence in dynamic continuity with my body as an existence. The double use of the word "know," in this connection, has also led to misunderstanding.

Critical realism is compelled to meet the problem of permanence and change. "The central paradox consists in the assertion that only the identical and permanent can change" (Taylor, "Elements of Metaphysics," p. 159). Why is this a paradox? It seems to me that Mr. Taylor has so defined his terms as to make them contradictories. It is no wonder, then, that they conflict. The pressure of

change in the world around us and in our lives should have led him to a critical examination of his categories, for it is better to modify concepts than to ignore facts. Can we, by taking process as the fundamental category, make the relations of permanence and change more fluid, so to speak, and overcome this abrupt *Verstandsantithese?*

Process portrays, to my mind, the dynamic character of reality. It signifies that "to be" is "to be active." By working from this category we can avoid the problem of a substratum or substance or identity which somehow possesses change or of which change is an adjective. This position is in accord with modern science at its best. A chemical reaction is no longer regarded as a mere exchange of partners, but as a complex process of establishing equilibrium in a disturbed system of energies. Rest is, also, explained by motion, not motion by rest. A complete reversal is thus made from the static view of permanence to the dynamic view of process.

But how can the demand for stability and continuance be satisfied in this apparent return to Heracliteanism? In two ways: First, conservation is an experimental fact which, unlike permanence, does not exclude change, but implies it. Second, organization supplies a relatively persistent structure to reality.

Organization is not an entity, but the form, εἶδος—to use an Aristotelian word—and its persistence does not involve an entity or atomic view of reality any more than the relative persistence of about the same meanings in consciousness involves the preservation of the same pulse of consciousness. Organization may be analyzed into structure and function. A clear idea of "form" can be obtained from a critical study of Aristotle. His failure completely to overcome the Platonic dualism between "ideas" and spatial things, the timeless and the temporal, permanence and change, the one and the many, matter and form, is extremely suggestive. These dualisms are really varied expressions of exactly the same dualism, and all have their roots in the embarrassment of permanence and change. Granted the timelessness and the universality of the forms, and potentiality and change must reside in matter alone. Standing upon the results of modern science and epistemology, is it possible for us so to reform his idea of form as to escape these dualisms and, also, to free it from any shadow of a logical realism? I think this result is made possible by an elimination of timelessness from form.

A few words in regard to Aristotle's epistemology may bring out more distinctly the view of "form" which I am seeking to present. According to the usual Greek theory, like could only be known by like. This led inevitably to a logical realism and, thence, to the dualisms referred to above. Now, suppose we believe that reality,

as a process, organizes itself in various ways and that we, through experimentation and reflection, involving actual handling and dissection of parts of reality, can comprehend this organization on both the structural and functional sides, this comprehension, on our part, does not imply that the organization is an entity residing in the various things. Such an hypostatization must be avoided at all hazard, for it is responsible for a great many false problems. It is this comprehension of the "form" of things, which, as I shall show, often changes very slowly or is constantly repeated in like things, that lifts knowledge above the psychological relativism of the concrete situation as such.

Accordingly, if we conceive reality as a stereometrical process more complicated in some portions than in others (this being explained by evolution), yet constantly in the moving stress of the reciprocal adaptation and self-achievement of its parts, we can gain the idea of an immanent change in no wise opposed to the conservation of energies or capacities. In Aristotelian language, we must commence with ἐνέργεια, and this requires nothing of the nature of an "unmoved mover" for its explanation, since there is no foil of a passive matter. Furthermore, avoiding the usual philosophical fault of extremes, we must protest against the objection that such a position lapses into the doctrine of flux. Philosophy has been ridden too long by violent contrasts like free-will and determinism, material and spiritual, mechanism and teleology, permanence and change; for it has, in being so ruled, shown a lack of balance and of feeling for fine discriminations. Let us be empirical enough to recognize that all things do not change with equal rapidity. Stones are fairly permanent in structure and function—witness the pyramids and cathedrals—so are fossils, and the mountains have stood in all ages as symbols of unchangingness. Ephemeræ rise and perish in a day, while man is able to maintain an equilibrium of anabolism and katabolism for some threescore years. Change is a comparative term, and to call the universe a process does not imply that the organization or "forms" of its parts vary in monotonous uniformity. A process is capable of differential organization—this is the essential significance of evolution—and these forms may have all degrees of stability from that of the so-called atom to the shifting variancy of the higher cortical areas.

Through all this development, however, there seems to me no reason to suppose that the total capacity for activity in the universe increases or decreases. This position I have expressed in the formula, that reality is a self-conserving process in which organization and the qualitative in general are related to the quantitative aspect

as the variant to the invariant. In support of this theory, I would appeal not only to the empirical tests which seem to rule out increase or decrease in subordinate systems, but, also, to logic. Increase, to my mind, involves origin; decrease involves nothingness as the ultimate result. A cone fitly symbolizes the schema, though the apex is turned in opposite directions in the two cases. Self-conservingness, on the other hand, is in harmony with a true eternity. Such a true eternity does not require the summation of an infinite series, nor does it mean simply an immense duration as is the popular view. I might add that it enables an escape from the Kantian antinomy, were it not that Russell has already shown, in his "Principles of Mathematics," that Kant had a false conception of the infinite, upon which false conception his antinomies really rest.

I have sought to prove that real time is identifiable with change; that reality, as a process, is complicated; and that the more complicated a part is, the greater the complexity and the intensity of change. Picture-thinking, combined with a confusion of experience and reality, may create a difficulty at this point. It is very hard to restrain oneself from the application of the linear idea of time to reality, but such an application might result in an infinite series due to the relation between the past and the present. This last problem could be avoided by the denial of the validity of any discontinuity between the past and the present in real time. There is, in a certain sense, an "eternal now" to reality, for reality has in itself no relation to a past or a future as such, since it is all-inclusive. Such a contrast-relation between present and past or between present and future, as I shall show in another article, has meaning only in our time construction. Any portion of reality, when we investigate it, is in a certain state or condition, and this state or form depends upon its nature and upon its place in the larger system of which it is a part. It is because a thing must be viewed as poised in the stress of dynamic relations that I have called real time—identifiable with change—stereometrical. This change is immanent; it is not a relation to a past that determines it. *Die Natur ist nur einmal da.* Reality, as a complicated process, conserves the result of past activities in itself. These may be star systems, Greek poems, or forms of government. It is what it is because it was what it was, and there is no breach of continuity.

Since, in the cosmic circulation, events like the sun's circuit are recurrent, these are taken by us as objective standards for other occurrences, especially for what have been called irreversible processes. Hence, the development in science of systems of measurement, *e. g.,* the c.g.s. units, has an actual basis in reality. Yet, while

the earth turns on its axis, a rock changes only to an infinitesimal degree and a flower blooms and dies.

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REVIEWS AND ABSTRACTS OF LITERATURE

A Study of the Influence of Custom on the Moral Judgment. FRANK CHAPMAN SHARP. Bulletin of the University of Wisconsin, No. 236. Madison, 1908. Pp. 144.

The disciplines known as "social psychology" and "the psychology of the moral consciousness" can scarcely be said yet to have attained to a rigorous scientific method. Their inductive bases seem to consist largely in the observations of human nature made by those who write upon these topics, together with copious illustrative material culled from the newspapers and the literature of ethnography. Neither the observations nor the ethnographic evidences are likely to be altogether wrong or unimportant; and it is probable, therefore, that most serious writings in these departments of inquiry contribute to our understanding of *some* of the real and significant factors in the processes with which they are concerned. But, whether a given writer has duly noted all the significant factors, and whether he has justly estimated their relative importance and correctly apprehended their interworkings, it remains permissible to doubt. In the almost entire absence of quantitative methods and of objective means of controlling and verifying conclusions, these studies continue to depend largely upon the imagination and the felicity in observation of individual theorists. They are consequently fields in which both incomplete enumeration and excessive generalization are easy, probably not infrequent, and therefore comparatively respectable. A conspicuous and interesting recent example of such exaggeration of a single real factor in the social process seems to me to be afforded by Professor Sumner's "Folkways." Sharp has evidently felt strongly the desirability of introducing a greater use of experimental and statistical methods into these sciences; and he has accordingly employed the method of the questionary to test the validity, within the range covered by the investigation, of one of the most familiar and most commonly accepted generalizations about the ordinary workings of the moral judgment—which happens to be precisely the one upon which Sumner's widely-read book has laid especial emphasis. In applying such a mode of inquiry in a careful and elaborate manner to such a problem Sharp is, I suppose, doing the work of a methodological pioneer; and his monograph has in that respect an importance not dependent upon the correctness of his somewhat revolutionary conclusions. It is, indeed, as a pertinent saying of Aristotle's may remind us, not advantageous to attempt to introduce into a science a degree of exactitude of which its subject-matter is not

properly susceptible; and the maxim indicates a danger to be anticipated if similar investigations are multiplied. But the greater danger at present lies in another quarter. We ought not to be content with general impressions and popular sayings as the basis of a science, if anything more objective can really be had. Sharp is by no means forgetful that his own procedure is beset with characteristic pitfalls. To the special limitations of the method of the questionary he gives explicit recognition. If he does not entirely succeed in avoiding all of them, his inquiry has been, at all events, conducted with an unusually alert sense for probable objections and possible sources of error, and with great ingenuity in devising checks and correctives.

Nearly one hundred undergraduates in the University of Wisconsin, and half as many students in the "short course in agriculture"—young men from the farms, ordinarily with only a common-school education—were asked to give their opinions, and the reasons for their opinions, upon five questions in casuistry—some seven hundred answers being thus secured. The written answers were in many cases supplemented by oral interviews, in which the students were subjected to searching cross-examination about their replies and their modes of reaching their conclusions on the questions set. Upon the facts thus elicited concerning the character and the grounds of the moral judgments of these two groups of young people, Sharp bases the conclusion that the theory that such judgments, in "persons still in the naïve stage of moral consciousness," are "the product of custom and kindred forces," is untenable. These Wisconsin students—especially the agricultural students—Sharp believes to be fairly representative of that ethical *naïveté*, and to be roughly typical of "a large section of the American, and presumably, therefore, of European society." And in the cases examined he finds no evidence favorable even to the "modified forms of the custom theory," which regard the pressure of the traditional collective will as at least "one factor acting in cooperation with native standards to produce the moral world." The prevailing doctrine about the sources and the *modus operandi* of the moral judgment of the natural man is for Sharp scarcely even a half truth. "The difference in kind which many philosophers imagine to exist between their own moral judgments and those of common sense is non-existent. *In essence* the process is the same for the learned and the unlearned, for the wise man and the fool."

The argument is, at certain points, somewhat blurred by reason of the absence of a satisfactory preliminary statement of the theory attacked. A chapter is, indeed, devoted to this purpose; but it seems neither adequate nor altogether clear. There are several distinguishable (though not always carefully distinguished) contentions about the influence of custom upon morality. Some writers on the subject have been singularly careless about defining the term "custom," and about observing the obvious and fundamental distinction between customary practises—the things habitually *done* under given conditions in a community—and customary approbations or reprobations—the things habitually re-

garded as obligatory or reprehensible. Certain theorists, without sufficient warrant, assume the two to be coextensive. Even among primitive peoples, as Jhering has remarked, not every *Gewohnheit* becomes *Sitte;* not every general practise, even though it be ancient, is treated as a morally binding rule, though the one doubtless frequently tends to develop into the other. The word "custom" in ethical and sociological usage ought, preferably, to be used in the latter sense, as meaning "not merely a habit of action, but also a judgment upon action"—to employ Hobhouse's definition. It is explicitly in this correct sense that Sharp uses the word; the theory that practise-custom merely as such generates morality he dismisses (p. 10) as an absurdity not worth discussing. But it is regrettable that he has not more fully reviewed the possible meanings and variations of the doctrine that approbation-customs are the principal source of the moral judgments of the individual. What he puts forward, under the name of "the foreign-pressure theory," as the typical form of that doctrine seems to be by no means the usual or the most plausible version of it. He supposes the custom theory to maintain that "the felt pressure of the *wills* of the many upon the individual's will generates in him the conviction that the action is obligatory." "The fact that a mode of conduct is general is taken by him as evidence that the majority (or all) *wish* it to be universal" (p. 10). This seems to me to be rather a caricature than an exposition of the theory. When the influence of custom is effective upon any mind there is (according to what I take to be the natural meaning of the hypothesis in question) seldom, if ever, any such conscious setting-off of the will of others (*qua* mere will) against the individual's will. The customary judgment has become a part of the individual's own approbational reaction, the folkways are for him the only conceivable or admissible ways, when they really control his attitudes or acts. He is, albeit unconsciously, in a situation like that of the poet:

> Gern wär ich Ueberliefrung los,
> Und ganz original, . . .
> Wenn ich nicht gar zu wunderlich
> Selbst Ueberliefrung wäre.

The "influence of custom," in the more serious forms of the theory, means merely the potency of social suggestion and of imitation so to shape inwardly the individual's mind that its approbations and reprobations mainly conform to the prevailing and traditional ones, and do so promptly and spontaneously.

Fortunately, in spite of a misleading initial formulation, it is really upon this version of the custom theory that, in the body of the monograph, Sharp's main arguments are directed. What his investigation is chiefly meant to disprove is the supposition that common sense morality is essentially characterized by unreflective immediacy, that the ordinary moral judgment can give no reasons for itself, but "has its source in an unthinking adherence to general [*i. e.,* unvariable] rules." And the positive conclusion to which the author holds that his induction points,

is that "man is born with certain desires and approbations, just as he is born with certain other emotions, such as fear or curiosity"; that "these are the sources of certain ideals of conduct, and that men, at any rate those of the cultural stages represented by the subjects of this investigation, judge conduct to be right or wrong according as it is thought to conform or not to conform to some one of these ideals." The moral judgments examined deal with the permissibility of a disregard for contract and promise, truth, property, and life, under specified conditions; and in these cases, he holds, the students under investigation have normally more or less clearly present to their minds utilitarian or eudæmonistic grounds for their opinions concerning the rightness or wrongness of the acts in question; that is, they tend to approve, regardless both of the customary practises and the conventional code, the conduct which they, either through deliberate consideration or vague feeling, believe "will produce the greatest attainable happiness for those whom they think of as affected by it." For these Wisconsin young persons, Sharp finds, have almost always a reason for their approvals or disapprovals fairly ready to hand; and whether their answers to the casuistical issues raised be rigoristic or latitudinarian, whether they do or do not conform to the current majority-opinion, the reasons are almost always definitely eudæmonistic.

Upon some details in the method of the investigation criticisms can be made which seem to me unquestionably to limit, though they by no means destroy, the force of the evidence. 1. It can not be admitted, even in the case of our great popular universities, with their huge masses of youth of exceedingly limited cultivation, that college students who are taking courses in literature, sociology, psychology, and the like, are fair samples of the "*naïve* stage" of morality. By a rigorous judge, the evidence from the one hundred regular undergraduates might not unfairly be ruled out of court. 2. The agricultural students are doubtless more typical. But even they represent chiefly a modern, Protestant, sermon-hearing, newspaper-reading class; and they would be peculiarly unresponsive to the customs of their tribe if they had *not* acquired some capacity for reflection upon casuistical difficulties, some acquaintance with general principles, and a tendency, in doubtful cases, to consider the consequences of acts. The New Testament alone is a strong influence making for a sort of antinomianism—for the disregard of fixed rules and the resort to broad, and therefore relatively flexible, moral criteria; and the populistic type of political doctrine is another such influence. It is not surprising, therefore, that these young men show some tendencies to a sort of latitudinarianism upon certain points, and can more or less readily correlate their specific moral judgments with general principles of the altruistic sort. Sharp's minute and elaborate inquiry was scarcely requisite to establish the existence of such tendencies in such a modern population; but it undeniably indicates that they have gone farther than most persons would have supposed. It *is*, certainly, somewhat surprising to find that more than half of these farmer boys hold it right for a physician to kill a patient incurably ill with a painful disease, who is

prepared and eager for death. 3. The number of agricultural students reported upon is 50. One could wish the numerical range of the induction wider, especially since these 50 are secured by a process of (apparently unavoidable) elimination from 211 such students before whom the questions were put, of which total 93 were unable or unwilling to hand in any answers at all. 4. From the written answers of the 50, reasons for their opinions were "almost totally absent" (p. 63). The reasons were secured only through oral interviews and cross-questioning, in which the interlocutor pointed out inconsistencies in the answers of the students, suggested reasons which *might* have underlain the answers, and the like. In spite of Sharp's evident effort to make this simply a means for getting at the otherwise hidden inwardness of these not readily self-expressive minds, the method is not one calculated to convince the severely skeptical. There were too many artificial factors in the situation, and too many possibilities (which not even such scrupulous care as that used here could wholly eliminate) for suggestion from questioner to student, to make one thoroughly confident that the final results of such an interview give a transparent picture of the manner in which the mind under investigation *would* work under the ordinary conditions in which moral judgments are passed. 5. The casuistical cases upon which opinions were called for were all especially difficult cases; and they were nearly all of them instances in which obedience to some imperative, commonly regarded as binding under ordinary circumstances, would lead either to great and useless suffering, or to the violation of some other equally binding imperative. Accepting, then, Sharp's statistical results even as they stand, they prove only that in this class of cases a considerable proportion of persons of the social type investigated tend to reach their moral judgments by means of some reflection upon the consequences of the acts contemplated. These results, however, do not at all prove that, in the great mass of cases, where the current moral ideas are less palpably at variance among themselves, the source of the moral approbations and reprobations of the individual is not to be found in "custom." If the questions had concerned such matters as the moral admissibility of polygamy, incest, suicide, divorce, profanity, Sabbath-breaking, even smoking by women, one suspects the results would have shown a good deal more "immediacy" and a good deal less of reasoning upon eudæmonistic grounds. On the matter of polygamy, agricultural students in Utah would very likely hold different opinions from those in Wisconsin. This could hardly be shown to be due to inferior native skill in the use of the calculus of values. The well-brought-up Turk, regarding polygamy as praiseworthy, would look with horror upon the potations of Milwaukee. Has custom nothing to do with these notorious and innumerable discrepancies between the codes of different communities? In all these cases I doubt not that reasons, of a sort, would be forthcoming, if insistently pressed for. In civilized societies conventional reasons or reason-suggesting epithets tend to gather round the recognized imperatives, just as etiological myths gather round the ritual

observances of nearly all peoples. But there is as little ground for assuming the reasons to be the real source and effective motive of the approbations they reenforce as for assuming the myths to be the source of the rites they ostensibly explain. The acceptance of the reasons is often itself simply a part of the custom, and nowise proves that the influence of custom is not the determining influence in the formation of the judgment.

To conclude, then: Sharp seems to me to have failed to justify his more sweeping negations of the custom theory. But against the excesses of that theory he has supplied a valuable corrective. In the group examined he has shown, not at all the absence of the custom factor, but undoubtedly the presence, under certain conditions, of other factors in the moral judgments of the natural man. And he has rightly pointed out an intrinsic probability—too little heeded by some writers on the omnipotence of custom—that at all stages of culture, especially when new situations or casuistical embarrassments have arisen, there has been a play of the individual's practical judgment and personal sympathies, supplementing custom, occasionally overriding it, and often gradually transforming it.

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Systematische Philosophie. W. DILTHEY, A. RIEHL, W. WUNDT, W. OSTWALD, H. EBBINGHAUS, R. EUCKEN, FR. PAULSEN, W. MÜNCH, TH. LIPPS. Die Cultur der Gegenwart, I., 6. Leipzig and Berlin: B. G. Teubner. 1907. Pp. viii + 432.

It is very difficult for a reviewer to do justice to a work of this kind. A summary that would be of any value would be too long to find a place in any periodical. The articles, too, because of their popular appeal are either so far free from controversial or uncertain statements, or are so privileged by the fact that they are intended to be popular, that criticism could only be offered as to the wisdom of including or excluding matter—a form of criticism that is bound to move on uncertain ground.

One can not accuse the editor of favoring any one school, for the more controversial general problems are treated three times over by men of different schools under titles that are apparently very different, but which really give opportunity for discussion of the same matter. Dilthey, Wundt, and Paulsen, each has a chance to outline his system of metaphysics. Dilthey under the title "The Nature of Philosophy," Wundt in an article entitled "Metaphysics," and Paulsen under the head of "The Future of Philosophy." Ostwald's "Naturphilosophie" arrives at conclusions on common matters that are characteristically different from those of Wundt and Dilthey. Each sees the end of his discipline in the development of a Weltanschauung, and each recognizes the close relation between science and philosophy or metaphysics. Ostwald would extend science to cover the problems of metaphysics, while the two other philosophers would subordinate science to philosophy, and coordinate its

results with those of other realms of thought before accepting them as adequate to the entire problem. Wundt takes occasion in this connection to read Haeckel, Ostwald, and Mach a lesson on the presumptiveness of the scientist, and insists that while they think they are keeping within the bounds of science they are really building up metaphysical systems with none of the conservatism of the present-day metaphysician. "The greatest skeptics have been the greatest mystics," is his final sentence in dismissing the school.

The better defined disciplines follow the current lines of treatment. Riehl gives a summary of the elements of inductive and deductive logic in the traditional form, and emphasizes the importance of methodology of the sciences for the modern treatment. In the systematic part of his treatise on epistemology he opposes the positivistic and the critical schools, and attempts to harmonize the two tendencies in the principle that form and content are both ideas, and must, therefore, be capable of being connected with the unity of thought. Nothing can enter our experience which does not in perception correspond to the unity of our thought. Empiricism and criticism must, therefore, be one.

Ebbinghaus is at his usual high level in the brief summary of psychology. After the elementary mental states have been considered he gives a relatively large part of his space to a discussion of belief, art, and religion. All three develop from the attempt to escape the disagreeable consequences of human foresight. With the development of intelligence and anticipation there are found to be many gaps in knowledge and much that must be left to uncertainty. Beliefs in general and their particular developments in religion and art represent man's endeavor to palliate fears and fortify hope as he contemplates the future.

"The Philosophy of History" by Eucken, "Ethics" by Paulsen and "Pedagogy" by Münch are résumés of the subject from the particular standpoints of the author. The article on "Esthetics," by Lipps, gives a clear statement of his theory of *Einfühlung* and should be valuable as a summary of his views, which are put more briefly and clearly here than is his wont.

As a whole the work should prove valuable as a popular exposition of several of the important German contemporary philosophical systems.

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Modern Classical Philosophers. Selections Illustrating Modern Philosophy from Bruno to Spencer. BENJAMIN RAND. Boston and New York: Houghton, Mifflin and Company. 1908. Pp. xiii + 740.

In the first place, this volume is a commendable example of good book-making. In seven hundred and forty pages (including a useful index) the publishers have given the editor's selections covering modern philosophy in a form at once handsome and serviceable. The print is clear, the paper is good, the book, though of necessity extended, is neither too large nor too heavy for convenient handling. The price, moreover,

is far from excessive. In fine, intended for a text and reference book, the printed volume in all external ways admirably fulfils its purpose.

The compiler, Dr. Rand, has exercised similar judgment and control. This is no typical volume of extracts, immaturely chosen and set in a frame of valueless notes, with which (at least in the case of single philosophers) we are all unhappily familiar. The present set of selections has been maturely and deliberately formed; the compiler, and those who have labored with him, have erred rather by restraint than by way of profusion in their remarks illustrative of the various texts. Indeed, if the trained reader is grateful for the absence of the time-worn "apparatus," the student or beginner might have profited by more of introductory or explanatory comments.

Thirdly, the list of works reproduced from the original texts or in translation will in general approve itself to those who are engaged in the task of philosophical instruction, and who have felt the need for some such book for reading in connection with their courses. In particular, teachers of philosophy will welcome those of Dr. Rand's extracts which are not so easily, or not at all, attainable in English elsewhere. In this connection, mention may be made of the opening version of the second dialogue from Bruno's "Della causa, principio, ed uno," by Professor and Mrs. Royce, and the translations from Fichte and Schelling by Dr. Rand himself. The thirty pages from Condillac's "Traité des sensations," on the contrary, might have been spared, especially as the earlier sensationalism of Hobbes had been accorded ample representation in the excerpts from "Leviathan."

This suggestion brings up the crucial question for both the compiler and the critic of a work like the one before us. In general, as has been said, Dr. Rand's choices will be cordially approved. And as he justly remarks in his preface (p. vii): "No two authorities will entirely agree as to the authors to be chosen." But good as his book is, it might be bettered in the later editions which are certain to be called for. Under Locke room might well be made for the substance of Chapters I.–II. of Book IV. of the "Essay" as well as of Chapters III.–IV.; if Berkeley's "Principles" were to be quoted *in extenso,* it is difficult to justify the omission of the classical "Introduction" to the work; we miss the fifth section of Hume's "Enquiry," though reasons exist for its absence; some, if not many, would have preferred less, comparatively, of Hegel's "Logik" and more of the "Phaenomenologie," and it is to be regretted that space could not have been found for some of the applications of the master's evolutionary idealism, *e. g.,* for excerpts from the "Einleitung" to the "Philosophie der Geschichte"; the fragment from Spencer's "First Principles," Part I., is quite inadequate, if the doctrine of the unknowable was to be included at all; the ending of the work with Spencer leaves later thought, in particular the reaction against naturalism, unrepresented, whereas selections from Lotze, say from the ninth book of the "Microcosmos," would worthily have rounded out the whole.

But these are minor points concerning which opinions are sure to

differ. As it stands, the work is heartily to be recommended to instructors and students alike. And besides fulfilling its primary object as a book for reading and reference, may it also, as Dr. Rand hopes, "prove a stimulus . . . for the perusal of the complete works of the philosophers" themselves (p. vii).

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Les femmes homicides. (Avec 40 planches hors texte contenant 161 figures, et 8 tableaux anthropométriques.) PAULINE TARNOWSKY. Paris: Félix Alcan. 1908. Pp. viii + 591.

A detailed account of 160 women murderers, largely from central Russia, compared with 150 normal average peasant women of the same region, forms the essence of this stately volume.

The author gives first a careful account of the methods employed in the anthropometric and functional examination, then discusses the physical stigmata, the heredity (with a historical sketch of the problem), the application of biology in the study of the criminal, and the principles of grouping the cases according to motives (passions—cupidity and greed, maternal instinct, sexual love, jealousy, vengeance, repeated outrages, hatred and cruelty; obtusion of the moral sense; the genetic sense and its deviations; accidental homicides, and homicides influenced by nervous and mental disorders). The individual records give the measurements, which reappear in the eight tables which sum up the results, an account of the crime, and, in many cases, a good family and personal history; but, in the main, there is scanty tendency to a formal analysis of the psychological make-up.

A certain number are normal types and, evidently, murderers by chance; a few were insane; but the larger number show at least mental disequilibration of varying degree and form, with numerous mental and physical stigmata of degeneracy and unfavorable heredity. In the eleventh chapter the author compares the averages of a few measurements of the head in the 160 murderesses, in non-criminal illiterate and in well-educated non-criminal women. Other tables add details for different types of criminals as well. Similarly, the distribution of the color of hair and eyes and especially that of the stigmata of degeneracy are rendered in such comparative tables, also the time of establishment of the menses, the relative extent of the visual fields, the sensations of taste, smell, hearing, pain, localization and extent of the knee-jerk. However little connection one may see in the relation of the individual finding to the criminality, the tables are decidedly striking, as are also the 156 pictures of these women.

The data, conveniently arranged on p. 515 and comparing 160 murderesses, 158 illiterate and 50 educated non-criminal women, 100 thieves and 216 prostitutes, leave very little doubt as to the constitutional inferiority of a large number of the homicidal women. It would be difficult to bring together a more substantial foundation for the final appeal for reform of the methods of dealing with the criminal.

From a methodological view-point and as a substantial contribution of facts, the volume is a great help for concrete orientation in this field.

Through some mishap, the well-known New York Institution is consistently referred to as the Elvira Reformatory. There is a bibliography, but no alphabetic index. The clearness of exposition makes this omission somewhat excusable.

ADOLF MEYER.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. August, 1908. *La volonté de conscience comme base philosophique de la morale* (pp. 113—137): A. FOUILLÉE. – It is natural to attach morality to the most radical principle in the psychic life. An ethics based on "*idées forces*" synthesizes science and philosophy from a practical and from a scientific point of view. *La formation de l'idéal* (pp. 138–159): M. MILLIOUD. – A study of the conditions under which ideals arise, when they are efficacious, and what effects they lead to when established. *La guerre et la paix au point de vue philosophique* (pp. 160–172): CH. RICHET. – A defense of the idea of peace as valid by both severe logic and rigorous ethics. *Notes et discussions: Mystique, science et magie:* PROBST-BIRABEN. *Analyses et comptes rendus:* Pollack, *Die philosophischen Grundlagen der Wissenschaftlichen Forschung:* DR. S. JANKELEVITCH. Revault d' Allonnes, *Les inclinations: leur rôle dans la psychologie des sentiments:* TH. RIBOT. J.-P. Nayrac, *La Fontaine:* L. ARRÉAT. L. William Stern, *Person und Sache:* LÉON POITEVIN. Bayet, *L'idée de bien:* FR. PAULHAN. C. Radulescu-Motru, *Puterea sufleteasca:* G. ASLAN. C. Bouglé, *Le solidarisme:* G.-L. DUPRAT. *Sociological Papers,* Vol. III: DR. S. JANKELEVITCH. Rudolph Goldscheid, *Entwicklungswerttheorie:* A. LANDRY. I. Woodbridge Riley, *American Philosophy:* G. COMPAYRÉ. C. Coignet, *L'évolution de protestantisme français au XIX^e^ siècle:* FIRMIN ROZ. Severin Aicher, *Kants Begriff der Erkenntniss verglichen mit dem des Aristoteles:* C. HUIT. *Revue des périodiques étrangers.*

Clark, L. Pierce, and Diefendorf, A. Ross. *Neurological and Mental Diagnosis.* New York: The Macmillan Co. 1908. Pp. x + 188. $1.25 *net.*

Scott, Colin A. *Social Education.* Boston: Ginn & Co. 1908. Pp. xi + 300.

Titchener, Edward Bradford. *The Psychology of Feeling and Attention.* New York: The Macmillan Co. 1908. Pp. vii + 404. $1.40 *net.*

Wenley, R. M. *The Movement towards "Physiological" Psychology.* Reprinted from *The Popular Science Monthly,* Vol. LXXII., June, 1908, and Vol. LXXIII., July, August, and September, 1908.

NOTES AND NEWS

PROFESSOR E. A. KIRKPATRICK has called our attention to the erroneous printing of his name on page 477 of the issue of the JOURNAL for August 27. We desire to express our regrets for the error.

MR. FRANCIS DARWIN'S presidential address before the Dublin meeting of the British Association for the Advancement of Science is printed in full in the issue of *Nature* for September 3. It is a defense of the mnemic conception of evolution. We take the following extracts from the address as illustrative of Mr. Darwin's views: "I want to give you a general idea of how the changes going on in the environment act as stimuli and compel plants to execute certain movements. Then I shall show that what is true of those temporary changes of shape we describe as movements is also true of the permanent alterations known as morphological. I shall insist that, if the study of movement includes the problem of stimulus and reaction, morphological change must be investigated from the same point of view. In fact, that these two departments of inquiry must be classed together, and this, as we shall see, has some important results—namely, that the dim beginnings of habit or unconscious memory that we find in the movements of plants and animals must find a place in morphology; and inasmuch as a striking instance of correlated morphological changes is to be found in the development of the adult from the ovum, I shall take this ontogenetic series and attempt to show you that here also something equivalent to memory or habit reigns. Many attempts have been made to connect in this way the phenomena of memory and inheritance, and I shall ask you to listen to one more such attempt, even though I am forced to appear as a champion of what some of you consider a lost cause—the doctrine of the inheritance of acquired characters. . . . Semon in his interesting book, 'Die Mneme,' has used the word *Engram* for the trace or record of a stimulus left on the organism. In this sense we may say that the internal conditions of Pfeffer, the physiological states of Jennings, and the internal conditions of Klebs are, broadly speaking, *Engrams*. The authors of these theories may perhaps object to this sweeping statement, but I venture to think it is broadly true. The fact that in some cases we recognize the chemical or physical character of the internal conditions does not by any means prevent our ascribing a *mnemic* memory-like character to them, since they remain causal agencies built up by external conditions which have, or may have, ceased to exist. Memory will be none the less memory when we know something of the chemistry and physics of its neural concomitant. . . . There is likely to be another objection to my assumption that a simple form of associated action occurs in plants—namely, that association implies consciousness. It is impossible to know whether or not plants are conscious; but it is consistent with the doctrine of continuity that in all living things there is something psychic, and if we accept this point of view we must believe that in plants there exists a faint copy of what we know as consciousness in ourselves. I am told by

psychologists that I must define my point of view. I am accused of occupying that unscientific position known as 'sitting on the fence.' It is said that, like other biologists, I try to pick out what suits my purpose from two opposite schools of thought—the psychological and the physiological. What I claim is that, as regards reaction to environment, a plant and a man must be placed in the same great class, in spite of the obvious fact that as regards complexity of behavior the difference between them is enormous. I am not a psychologist, and I am not bound to give an opinion as to how far the occurrence of definite actions in response to stimulus is a physiological and how far a psychological problem. I am told that I have no right to assume the neural series of changes to be the cause of the psychological series, though I am allowed to say that neural changes are the universal concomitants of psychological change. This seems to me, in my ignorance, an unsatisfactory position. I find myself obliged to believe that the mnemic quality in all living things (which is proved to exist by direct experiment) must depend on the physical changes in protoplasm, and that it is therefore permissible to use these changes as a notation in which the phenomena of habit may be expressed. . . . If the mnemic theory is compared with Weismann's views it is clear that it is strong precisely where these are weakest—namely, in giving a coherent theory of the rhythm of development. It also bears comparison with all theories in which the conception of determinants occurs. Why should we make elaborate theories of hypothetical determinants to account for the potentialities lying hidden in the germ-cell, and neglect the only determinants of the existence of which we have positive knowledge (though we do not know their precise nature)? We know positively that by making a dog sit up and then giving him a biscuit we build up something in his brain in consequence of which a biscuit becomes the stimulus to the act of sitting. The mnemic theory assumes that the determinants of morphological change are of the same type as the structural alteration wrought in the dog's brain. . . . We may fix our eyes on phylogeny and regard the living world as a great chain of forms, each of which has learned something of which its predecessors were ignorant; or we may attend rather to ontogeny, where the lessons learned become in part automatic. But we must remember that the distinction between phylogeny and ontogeny is an artificial one, and that routine and acquisition are blended in life. The great engine of natural selection is taunted nowadays, as it was fifty years ago, with being merely a negative power. I venture to think that the mnemic hypothesis of evolution makes the positive value of natural selection more obvious. If evolution is a process of drilling organisms into habits, the elimination of those that can not learn is an integral part of the process, and is no less real because it is carried out by a self-acting system. It is surely a positive gain to the harmony of the universe that the discordant strings should break. But natural selection does more than this; and just as a trainer insists on his performing dogs accommodating themselves to conditions of increasing complexity, so does natural selection pass on its pupils from one set of

conditions to other and more elaborate tests, insisting that they shall endlessly repeat what they have learned and forcing them to learn something new. Natural selection attains in a blind, mechanical way the ends gained by a human breeder; and by an extension of the same metaphor it may be said to have the power of a trainer—of an automatic master with endless patience and all time at his disposal."

WE take the following comment on specialization in science from a notice in *The Athenæum* of Louis Houllevigue's "L'évolution des sciences": "Admirable as is his reasoning in this final chapter, we fear that the ideal there set forth is realizable only in Utopia, for the most marked feature of modern science (in the more restricted and popular sense of the word) is the resoluteness with which it applies itself to the bettering of the conditions of everyday life. But this can only be done, so to speak, piecemeal, and by the most careful attention to details; and it is this fact, rather than the perverseness of its professors, which has brought about, as it seems to us, the over-specialization which, as friends of abstract learning, we deplore."

WE learn that Mr. T. M. Johnson, of Osceola, Mo., is collecting materials for a book on the writings of Thomas Taylor the Platonist. He will be glad to hear from those who have any of his works with manuscript notes or memoranda in his handwriting, or any of his letters or manuscripts.

THE *Revue de métaphysique et de morale* for September is devoted to a series of papers dealing with contemporary philosophy in countries other than France. Professor Frank Thilly, of Cornell University, has written the paper on philosophy in the United States of America. American philosophy is indebted to him for a very thorough and unbiased presentation of its current tendencies. The other contributions to the *Revue* are by J. Benrubi, J. S. Mackenzie, G. Amendola, H. Höffding, F. G. Calderon, who write of philosophy in Germany, England, Italy, Scandinavia, and South America.

THE death is announced, in his sixty-third year, of C. A. J. Fritz Schultze, professor of philosophy and pedagogics in the Technical High School of Dresden. His works include "Geschichte der Philosophie der Renaissance," "Stammbuch der Philosophie," "Philosophie der Naturwissenschaft," "Kant und Darwin," and "Psychologie der Tiere und Pflanzen."

PROFESSOR R. M. WENLEY concludes in the *Popular Science Monthly* for September his articles on "The Movement towards 'Physiological' Psychology." The final paper is chiefly an exposition of Professor Wundt's views.

M. ANTOINE HENRI BECQUEREL, the eminent French physicist, died at the age of fifty-six years, on August 25, at Croisic, in Brittany. *Nature* for September 3 contains an account of his contributions to science.